

Remarks/Arguments

In the Non-Final Office Action dated October 15, 2009, it is noted that claims 1, 3-7, and 9-12 are pending; that claims 1, 3, 6, 7, 9, and 11 stand rejected under 35 U.S.C. §102; that claims 4, 5, and 10 are objected to as being dependent from a rejected base claim.

By this response, claims 7 and 11 have been amended to reflect a proper antecedence for the “free channel” terms employed therein. No new matter has been added.

Allowable Subject Matter

Objection has been raised to claims 4, 5, and 10 as being dependent from rejected base claims. It was noted that these claims would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Applicant’s representative thanks the Examiner for carefully reviewing the claims and identifying allowable subject matter. Applicant believes in view of the remarks below that the base claims 1 (for claims 4 and 5) and 7 (for claim 10) are allowable over the cited reference. Applicant has therefore decided to defer without prejudice any rewriting of claims 4, 5, and 10 into independent form at the present time.

Cited Art

The following references have been cited and applied against the claims in the present Office Action: U.S. Patent Application Publication No. US 2002/0176437 to Busch et al., now U.S. Patent 7,499,964 (both hereinafter “*Busch*”); and U.S. Patent 5,933,420 to Jaszewski et al. (hereinafter “*Jaszewski*”).

Rejection of Claims 1, 3, 6, 7, and 9 under 35 U.S.C. §102

Claims 1, 3, 6, 7, and 9 stand rejected under 35 U.S.C. §102 as being anticipated by Busch. This rejection is respectfully traversed.

Claims 1, 7, and 11 are independent base claims. Claims 3 and 6 depend directly from claim 1; and claim 9 depends from claim 7.

Claim 1 in part recites the following two limitations:

wherein the first access point is adapted to determine whether there is a first free channel and a second free channel; and

wherein, in case there are first and second free channels, the first access point is adapted to control a setting of the first and second communication channels on the basis of the first and second free channels.

Neither of the limitations recited above from claim 1 are taught, shown, or suggested by Busch.

Busch appears to teach a system in which access points are capable of swapping frequency channels under certain conditions. *See Busch at Figures 5 and 6 and the detailed description related thereto, particularly, paragraphs [0072] through [0079].* When a first access point determines that a swap should occur, the first access point so informs the second access point with a swap request. If and when the second access point responds affirmatively to the swap request by the first access point, the channel swap is initiated with the first access point assuming control and communication over the communication channel heretofore used by the second access point and with the second access point concurrently assuming control and communication over the communication channel heretofore used by the first access point. In this way, each access point in Busch involved in a swap transfers its communications onto the channel that had been used by the other access point that is party to the swap. No other channels are taught or suggested by Busch for swapping.

From this analysis, it is clear that Busch does not teach or even remotely suggest the existence, determination, or use of free channels as required in the claim. Busch lacks any mention of the concept of a free channel. Busch only swaps channels that, up to the point of the swap, were in use by the access points involved in the swap. A channel that is in use cannot be considered by any reasonable interpretation as a “free channel.”

The claims require that “the first access point is adapted to determine whether there is a first free channel and a second free channel.” But no such determination is made by Busch. The swapped channels are not ever determined to be “free channels” by any access point in Busch. The only reason the swapped channels are ever determined by Busch to be a candidate for the swap is that the swap channels are actually being used by the access points which are parties to the channel swap. Thus, Busch does not teach, show, or suggest the limitations of claim 1.

The claims also require that the operation of “the first access point ... to control a setting of the first and second communication channels” is pre-conditioned on the determination that “there are first and second free channels.” As already discussed in depth above, Busch’s access points fail to make any determination about the existence of a free channel. Even if the access points are considered, only for the sake of argument herein and not for the purposes of an admission by the Applicant, to operate in the manner suggested by the Examiner, there is no

teaching in Busch that the control of the channel swapping is conditioned on the existence of “first and second free channels,” as required by the claims. Instead, Busch’s channel swapping is conditioned on the existence of two communications channels already in use by the access points that are parties to the channel swap. Hence, Busch does not teach, show, or suggest the limitations of claim 1.

The claims also require that the operation of “the first access point ... to control a setting of the first and second communication channels” is performed “on the basis of the first and second free channels.” There is no teaching in Busch that the channel swapping is based in any part on “first and second free channels,” as required by the claims. It is restated again that Busch’s access points fail to make any determination about the existence of a free channel. Busch’s channel swapping is performed utilizing the same two communications channels already in use by the access points that are parties to the channel swap. Since these two swap channels are already in use prior to the swap operation, they cannot be reasonably considered to be the “free channels” defined in the claims. Thus, Busch does not teach, show, or suggest the limitations of claim 1.

In view of the remarks above, it is believed that Busch fails to teach all the elements of independent claim 1. Since the dependent claims include all the limitations of their respective independent base claim, it is also submitted that Busch also fails to teach all the elements of claims 3 and 6, dependent from claim 1.

In light of these remarks, it is believed that Busch does not anticipate or make obvious claims 1, 3, and 6. Thus, it is submitted that claims 1, 3, and 6 are allowable under both 35 U.S.C. §102 and 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Claim 7 recites limitations similar to those discussed above for claim 1. To wit, claim 7 in part calls for:

*wherein the first access point is further adapted to determine whether there is **a first free channel**; and
wherein, in case there is **the first free channel**, the first access point is further adapted to control a setting of the first communication channel on the basis of **the first free channel**.*

From the remarks above with respect to claim 1, it should be clear that Busch fails to teach, show, or suggest the existence or use of a free channel, the determination of a free channel, the conditioning of an operation on the existence of a free channel, or the use of a free channel as a basis for controlling the setting of a channel.

For all the reasons set forth above and with respect to the similar limitations found in claim 1, it is believed that Busch fails to teach all the elements of independent claim 7 and the claims dependent thereon. Thus, it is also submitted that Busch also fails to teach all the elements of claim 9, dependent from claim 7.

In light of these remarks, it is believed that Busch does not anticipate or make obvious claims 7 and 9. Thus, it is submitted that claims 7 and 9 are allowable under both 35 U.S.C. §102 and 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Rejection of Claim 11 under 35 U.S.C. §102

Claim 11 stands rejected under 35 U.S.C. §102 as being anticipated by Jaszewski. This rejection is respectfully traversed.

Claim 11 is an independent claim that calls in part for:

Method of operating an access point of a wireless network, the method comprising the steps of:

...

determining whether there is a first free channel;
controlling a setting of the first communication channel on the basis of the first free channel in case there is the first free channel;

...

requesting a second interference and channel usage map from the other access point in case there is no first free channel;
determining an optimized channel lay-out on the basis of the first and second interference and channel usage maps; and
controlling the setting of the first communication channel on the basis of the optimized lay-out.

Jaszewski does not teach, show, or suggest either of the limitations shown in the partial reproduction of claim 11 above. The initial set of remarks below will show that Jaszewski lacks any ability to determine whether a channel is free and that the access points lack any ability to control setting of the communication channel for itself or for any other access point, whether or not conditioned on the existence of a free channel.

Jaszewski appears to disclose a wireless network with a wired backbone network. *See Jaszewski in Figure 1 and col. 3, lines 17-26.* The wireless network appears to allow wireless communications among access points and between an access point and its network nodes or subscriber terminals. *Ibid.* The wired network appears to be used to connect the access points to a network manager. *Ibid.*

In operation, the access points in Jaszewski, under control of and responsive to the network manager, appear to collect information about neighboring access points by using

“Where are you?” and “I am here” messages to each other. *See Jaszewski at col. 5, lines 42-44 and at col. 4, line 41 through col. 5, line 8, as well as in Figures 1, 2, and 3.* This information appears to be organized by each access point in a local neighbor table. *See Jaszewski at Figure 3 and the specification related thereto at col. 8, line 55 to col. 9, line 58.* The information is then collected by the network manager for processing. *See Jaszewski at col. 5, lines 13-16.*

According to Jaszewski, the network manager uses the information to generate new channel assignments to reduce channel conflict and the attendant interference. *See Jaszewski at col. 5, lines 16-19.* The new channel assignments are broadcast back to each access point so that the access point can adapt, if necessary, to the new assignment. *See Jaszewski at col. 5, lines 36-37 and col. 8, lines 13-18.* The channel assignment operations performed by the network manager in Jaszewski are shown in Figure 2 as step 220 through step 260. *See Jaszewski at Figure 2 and at col. 5, lines 44-45 and col. 6, lines 46-48.* Jaszewski is clear that the network manager alone is responsible for determining channel assignments and for distributing the new channel assignments to the access points. *See Jaszewski at col. 4, lines 36-38; col. 5, lines 16-19; col. 5, lines 44-45; col. 6, lines 48-50; col. 7, lines 9-10; and col. 8, lines 13-18.*

Jaszewski does not teach, show, or suggest that the access point is capable of “determining whether there is a first free channel,” as defined in claim 11. It is apparent from the remarks above and from a careful review of Jaszewski that the access points therein organize the local neighbor table based on messages sent and received by each respective access point. But there is no teaching in Jaszewski that an access point includes any capability or tendency to determine whether a channel is free. Only the network manager that is connected to the group of access points appears to have sufficient operational intelligence to analyze the information in all the local neighbor tables from the connected access points. Even the network manager, when analyzing the received local neighbor tables, does not appear to determine whether any channels are free. The network manager appears instead to concentrate its efforts on reducing channel conflict without any mention or suggestion of determining whether a channel is free. *See Jaszewski at col. 7, lines 8-54.* Thus, Jaszewski does not teach all the elements of claim 11.

Jaszewski does not teach, show, or suggest “controlling a setting of the first communication channel on the basis of the first free channel in case there is the first free channel,” as defined in claim 11. Again, it is apparent from the remarks above and from a careful review of Jaszewski that each access point responds to the receipt of a new channel assignment from the network manager. But there is no teaching or suggestion in Jaszewski that

an access point includes any capability or tendency to control its own channel setting or the channel setting of a neighbor access point when a channel is free. It is only the network manager connected to the group of access points which appears to have sufficient capability to control the setting of a communication channel in an access point connected thereto. The network manager generates the new channel assignments, and then broadcasts the channel assignments to the connected access points. As such, only the network manager performs any control over channel connections for an access point. *See Jaszewski at col. 8, lines 13-20.* Thus, Jaszewski does not teach all the elements of claim 11.

The present Office Action cites the end of col. 3 through the top two-thirds of col. 4 of Jaszewski in apparent support of the rejection of the two limitations discussed so far above. *See the present Office Action at page 4.* The reliance on the cited sections of Jaszewski is misplaced in this regard.

It is asserted in the Office Action that Jaszewski, at col. 3, line 59 – col. 4, line 25, teaches the limitation of the access point “determining whether there is a first free channel.” In fact, the Office Action goes on to explain that the teaching in the cited section of Jaszewski is for “determining whether access points are using the same channel.” *See the present Office Action at page 4.* But determining whether two access points are sharing the same channel or are operating on different channels is not even remotely equivalent to or suggestive of the claimed limitation of “determining whether there is a first free channel.” There is no mention in the cited section of Jaszewski that the access points or any other device in Jaszewski’s system is “determining whether there is a first free channel,” as required by the claim. Thus, Jaszewski does not teach all the elements of claim 11.

Contrary to the assertion on page 4 of the present Office Action, Jaszewski’s access points do not generate the new set of channel assignments. The functionality described by Jaszewski in col. 4, lines 11-40 for generating the new set of channel assignments is a network manager 110 functionality and must be understood and interpreted in the context set forth in the entire Jaszewski specification. In Jaszewski as a whole, it is abundantly clear that the detection of interference via conflicts and the generation of new channel assignments is completely and exclusively reserved for the network manager, not the access point. Jaszewski reserves steps 220 through 260 in Figure 2 for the network manager alone to perform. *See Jaszewski at col. 5, lines 44-45.* Step 220 is entitled “Generate Conflict Level Table;” step 230 is entitled “Generate an Alternate Set of Channel Assignments;” step 240 is entitled “Display the Conflict Level

Information;” step 250 is entitled “Allow the User to Modify the Alternate Set of Channel Assignments;” and step 260 is entitled “Send New Channel Assignments.” *See Figure 2 of Jaszewski*. All these steps are performed by the network manager. None of the steps are performed in any way, shape, or form by an access point.

Jaszewski, at col. 6, line 46 through col. 7, line 35, discusses the details of steps 220 and 230 after the steps 210-216 have been completed at the access points. It has been explained carefully and clearly above that steps 220 and 230 are performed by the network manager, not by the access point. To wit, Jaszewski states that “[t]he network manager 110 then performs step 20 through step 260.” *See Jaszewski at col. 5, lines 44-45*. With such a clear teaching and statement by Jaszewski, one can only conclude that Jaszewski defines the operation of the network manager, as opposed to the access point. As a result, it is believed that Jaszewski does not teach, show, or suggest all the elements of claim 11.

It should be noted that the network manager is not capable of acting as, or being substituted for, an access point. Jaszewski’s network manager is in communication solely with the access points. There is no communication provided from the network manager to the network nodes (i.e., terminals) in Jaszewski. The claim requires that the defined access point provides a communication channel to a terminal. Thus, the network node in Jaszewski is not even remotely suggestive of, and cannot be reasonably analogized to, the access point defined in claim 11.

For all the reasons set forth above, it is believed that the elements of claim 11 are not taught, shown, or suggested by Jaszewski, either separately or in combination with known prior art. It is therefore submitted that the elements of claim 11 are not anticipated by Jaszewski and the elements of claim 11 would not have been obvious to a person of ordinary skill in the art upon a reading of Jaszewski, separately or in combination. Thus, it is submitted that claim 11 is allowable under both 35 U.S.C. §102 and 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

In addition to the patentable distinctions for claim 11 over Jaszewski given above, it should be noted that Jaszewski fails to teach show or suggest the limitations of:

requesting a second interference and channel usage map from the other access point in case there is no first free channel;
determining an optimized channel lay-out on the basis of the first and second interference and channel usage maps; and
controlling the setting of the first communication channel on the basis of the optimized lay-out.

It has been documented above that the access points of Jaszewski have no capability or tendency to perform any operation involving determination of optimized channel layouts or channel assignments since Jaszewski has clearly given that operation exclusively to the network manager. Moreover, it has been shown that the network manager in Jaszewski cannot be analogized to, and cannot be made to appear even remotely suggestive of, an access point as defined in claim 11.

There is no suggestion or teaching in Jaszewski of wherein one access point requests an interference and channel usage map from another access point. Such requests are made only by Jaszewski's network manager to the access points. *See Jaszewski at col. 5, lines 42-44.* That is, the network manager requests that each access point proceed through the "Where are you?" and "I am here" messaging protocol followed by the creation of its own local neighbor table. The local neighbor table from each access point is then sent to the network manager. There is no suggestion in Jaszewski that the local neighbor table is ever sent to another access point.

Additionally, there is no suggestion or teaching in Jaszewski that an access point controls the channel setting of communication channels not associated with that particular access point. It has been discussed above with respect to claim 11 that the network manager in Jaszewski via distribution of the new channel assignments controls the setting of each access point.

Finally, there is no teaching or suggestion in Jaszewski that there is any type of process by which one particular access point controls the setting of communication channels for the other access points. In Jaszewski, the access points are all equal peers in the embodiments shown in Figure 1 of Jaszewski and discussed in the specification. Nowhere in Jaszewski is there a mention about having one access point control the setting of the communication channels for one or more other access points. Moreover, there is no teaching in Jaszewski that an access point coordinates communication channels for other access points. Jaszewski is clear that the coordination of communication channels for access points is the sole and exclusive domain of the network manager, which is not itself similar to or suggestive of an access point.

For all the additional reasons set forth above, it is believed that the elements of claim 11 are not taught, shown, or suggested by Jaszewski. It is therefore submitted that the elements of claim 11 are not anticipated by Jaszewski and that the elements of claim 11 would not have been obvious to a person of ordinary skill in the art upon a reading of Jaszewski, separately or in combination with other known art. Thus, it is submitted that claim 11 is allowable under both 35 U.S.C. §102 and 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that all the claims pending in this patent application are in condition for allowance. Reconsideration and allowance of all the claims are respectfully solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner contact the applicant's attorney, so that a mutually convenient date and time for a telephonic interview may be scheduled for resolving such issues as expeditiously as possible.

In the event there are any errors with respect to the fees for this response or any other papers related to this response, the Director is hereby given permission to charge any shortages and credit any overcharges of any fees required for this submission to Deposit Account No. 14-1270.

Respectfully submitted,

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